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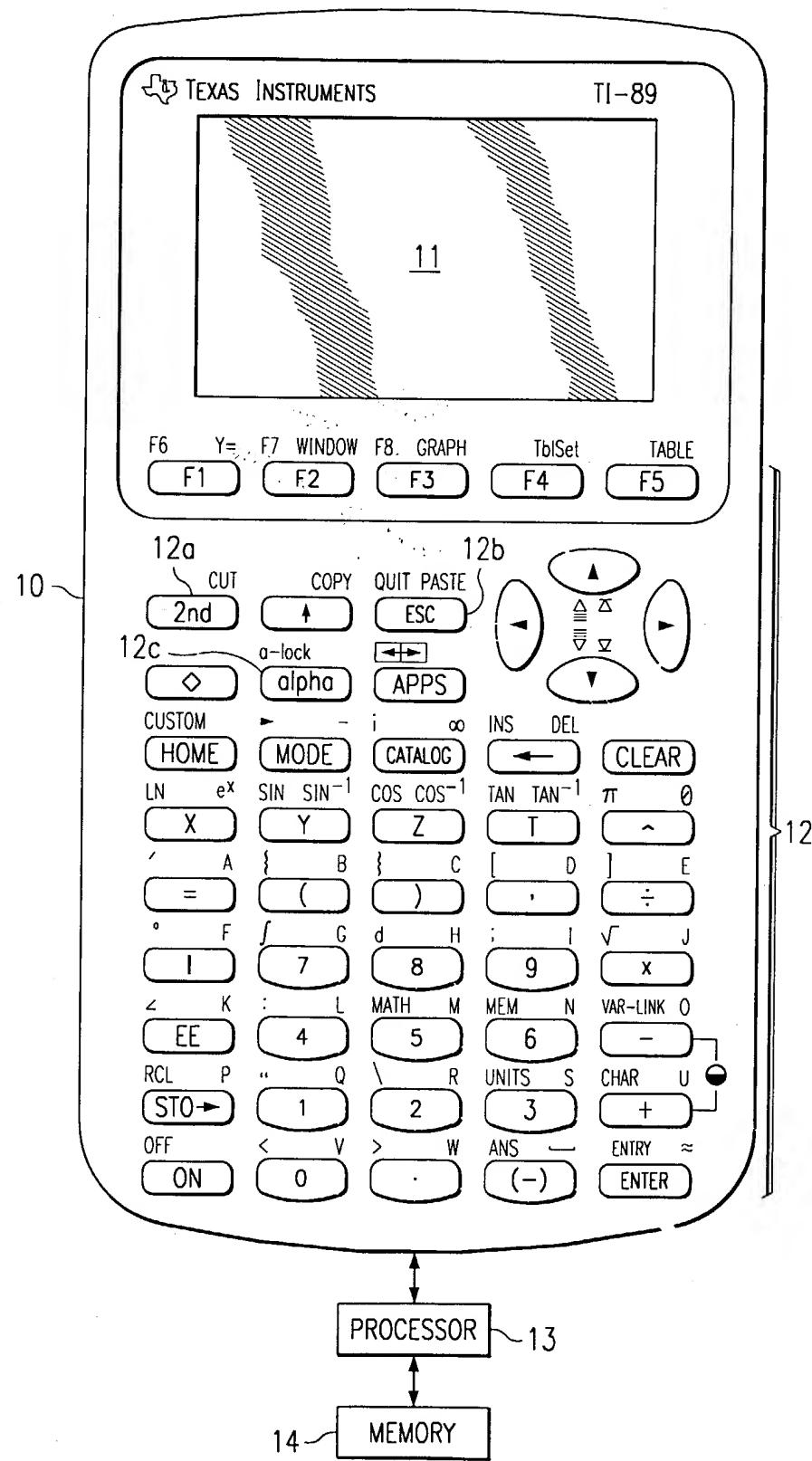
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FIG. 1
(PRIOR ART)





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F1▼ Prob Set	F2▼ Prob	F3 <input checked="" type="checkbox"/> a+b	F4 Trans	F5	F6▼ ?	F7▼ Tools
P1: Solve for x						
$x^2 - 3 \cdot x = 4$						
102	104	106	108	100	110	MAIN RAD AUTO FUNC 1/1

FIG. 2a

SELECT TRANSFORMATION

$x^2 - 3 \cdot x = 4$

1: add ? to each side
 2: multiply each side by ?
 3: switch sides
 4: factor left-hand side
 5: complete the square
 6: enter subexpr selection

TYPE OR USE ← → ↑ ↓ + [ENTER] OR [ESC]

FIG. 2b

F1▼ Prob Set	F2▼ Prob	F3 <input checked="" type="checkbox"/> a+b	F4 Trans	F5	F6▼ ?	F7▼ Tools
P1: Solve for x						
add ? to each side						
$x^2 - 3 \cdot x = 4$						
? = <input type="text" value="-4"/>						
Enter=OK				ESC=CANCEL		
MAIN	RAD	AUTO	FUNC	1/1		

FIG. 2c



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F1▼ Prob Set	F2▼ Prob	F3 a+b	F4 Trans	F5	F6▼ ?	F7▼ Tools	
P1: Solve for x							
$x^2 - 3 \cdot x = 4$							
► add -4 to each side							
Press <ENTER>							
MAIN	RAD AUTO	FUNC			PAUSE		

FIG. 2d

F1▼ Prob Set	F2▼ Prob	F3 a+b	F4 Trans	F5	F6▼ ?	F7▼ Tools	
P1: Solve for x							
$x^2 - 3 \cdot x = 4$							
► add -4 to each side							
$x^2 - 3 \cdot x + -4 = 4 + -4$							
MAIN	RAD AUTO	FUNC			PAUSE		

FIG. 2e

F1▼ Prob Set	F2▼ Prob	F3 a+b	F4 Trans	F5	F6▼ ?	F7▼ Tools	
P1: Solve for x							
$x^2 - 3 \cdot x = 4$							
► add -4 to each side							
$x^2 - 3 \cdot x + -4 = 4 + -4$							
► simplify							
Press <ENTER>							
MAIN	RAD AUTO	FUNC			PAUSE		

FIG. 2f



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F1▼ Prob Set	F2▼ Prob	F3 [a]+b	F4 Trans	F5	F6▼ ?	F7▼ Tools	
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P1: Solve for x

$x^2 - 3 \cdot x = 4$

► add -4 to each side

$x^2 - 3 \cdot x + -4 = 4 + -4$

► simplify

$x^2 - 3 \cdot x - 4 = 0$

MAIN RAD AUTO FUNC 1/1

FIG. 2g

SELECT TRANSFORMATION

$x^2 - 3 \cdot x - 4 = 0$

1: add ? to each side
 2: multiply each side by ?
 3: switch sides
 4: factor left-hand side
 5: quadratic formula
 6: enter subexpr selection

MAIN RAD AUTO FUNC 1/1

FIG. 2h

F1▼ Prob Set	F2▼ Prob	F3 [a]+b	F4 Trans	F5	F6▼ ?	F7▼ Tools	
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P1: Solve for x

$x^2 - 3 \cdot x + -4 = 4 + -4$

► simplify

$x^2 - 3 \cdot x - 4 = 0$

► factor left-hand side

$(x - 4) \cdot (x + 1) = 0$

MAIN RAD AUTO FUNC 1/1

FIG. 2i



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SELECT TRANSFORMATION

$$(x-4) \cdot (x+1)=0$$

1:add ? to each side
2:multiply each side by ?
3:switch sides
4: $A \cdot B=0 \rightarrow A=0 \text{ or } B=0$
5:distribute multiplication
6: $(A+B) \cdot C \rightarrow A \cdot C \pm B \cdot C$
7: $\downarrow A \cdot (B \pm C) \rightarrow A \cdot B \pm A \cdot C$

MAIN	RAD AUTO	FUNC	1/1
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FIG. 2j

F1▼ Prob Set	F2▼ Prob	F3 <input checked="" type="checkbox"/> a+b	F4 Trans	F5	F6▼ ?	F7▼ Tools
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P1: Solve for x

$$x^2 - 3 \cdot x - 4 = 0$$

► factor left-hand side
 $(x-4) \cdot (x+1)=0$
 ► $A \cdot B=0 \rightarrow A=0 \text{ or } B=0$
 $x-4=0 \text{ or } x+1=0$

MAIN	RAD AUTO	FUNC	1/1
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FIG. 2k

SELECT TRANSFORMATION

$$x-4=0 \text{ or } x+1=0$$

1:solve linear equation
2:enter subexpr selection

TYPE OR USE ← → ↑ ↓ + [ENTER] OR [ESC]

FIG. 2l



F1▼ Prob Set	F2▼ Prob	F3 [a]+b	F4 Trans	F5	F6▼ ?	F7▼ Tools
P1: Solve for x						
$(x-4) \cdot (x+1)=0$						
► A · B=0 → A=0 or B=0						
$x-4=0$ or $x+1=0$						
► solve linear equation						
$x=4$ or $x=-1$						
MAIN	RAD AUTO	FUNC		1/1		

FIG. 2m

F1▼ Prob Set	F2▼ Prob	F3 [a]+b	F4 Trans	F5	F6▼ ?	F7▼ Tools
P1: Solve for x						
$x^2 - 3 \cdot x - 4 = 0$						
► quadratic formula						
$x = \frac{-b + \sqrt{(-3)^2 - 4 \cdot 1 \cdot -4}}{2 \cdot 1}$ or ►						
MAIN	RAD AUTO	FUNC		1/1		

FIG. 2n

F1▼ Prob Set	F2▼ Prob	F3 [a]+b	F4 Trans	F5	F6▼ ?	F7▼ Tools
P1: Solve for x						
► quadratic formula						
$x = \frac{-b + \sqrt{(-3)^2 - 4 \cdot 1 \cdot -4}}{2 \cdot 1}$ or ►						
► simplify						
$x=4$ or $x=-1$						
MAIN	RAD AUTO	FUNC		1/1		

FIG. 2o

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F1▼ Prob Set	F2▼ Prob	F3 a+b	F4 Trans	F5	F6▼ ?	F7▼ Tools
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P3: Solve for x

$x^2 - 3 \cdot x = 4$

► add -4 to each side

$x^2 - 3 \cdot x + -4 = 4 + -4$

► simplify

114 $x^2 - 3 \cdot x - 4 = 0$

116 Use $\leftarrow, \rightarrow, \downarrow, \uparrow, \text{Shift } \leftarrow, \text{Shift } \rightarrow, \text{ESC}, F3, F4, F7$

FIG. 3a

FIG. 3b

SELECT TRANSFORMATION

$x^2 - 3 \cdot x - 4$

1:factor
2: $A-B \rightarrow A+ -B$
3:exit subexpr selection
4:rewrite as ?

TYPE OR USE $\leftarrow \rightarrow \uparrow \downarrow + [\text{ENTER}] \text{ OR } [\text{ESC}]$

F1▼ Prob Set	F2▼ Prob	F3 a+b	F4 Trans	F5	F6▼ ?	F7▼ Tools
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P3: Solve for x

$x^2 - 3 \cdot x = 4$

► add -4 to each side

$x^2 - 3 \cdot x + -4 = 4 + -4$

► simplify

$x^2 [-3 \cdot x] - 4 = 0$

MAIN RAD AUTO FUNC 3/3

FIG. 3c

FIG. 3d

SELECT TRANSFORMATION

$-3 \cdot x$

1:arithmetic
2: $(-A) \cdot B \rightarrow -(A \cdot B)$
3:arith, $-$, 0 & 1 ident
4: $A \cdot B \rightarrow B \cdot A$
5:exit subexpr selection
6:rewrite as ?

TYPE OR USE $\leftarrow \rightarrow \uparrow \downarrow + [\text{ENTER}] \text{ OR } [\text{ESC}]$